

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Plant Growth and Development

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Ham burger Plant?</i> - To become aware of dependence on plants as the originator of most food sources	3.1; 3.3; 3.12; 3.14	n/a	3.2	3.17
2. <i>Benefits Mobile</i> - To be aware of the dependence all people have on plants	3.1; 3.3; 3.10; 3.12	n/a	3.2	3.17
3. <i>Know &amp; Show Sombrero</i> - To show an understanding of the benefits of plants to people	3.1	n/a	3.2	3.17
4. <i>The Medicine Plant</i> - To recognize the medicinal properties of the aloe vera plant	3.1	n/a	3.1; 3.10	n/a
5. <i>Choo-Choo Song</i> - To associate a variety of plants with their food products by learning a song	3.1	n/a	n/a	n/a
1. <i>Leaves &amp; Seeds Sort Info Chart</i> - To be able to classify leaves and seeds as monocots & dicots	3.1; 3.9	3.2	3.2; 3.10	3.16; 3.17
1. <i>Plant Parts Rap</i> - To gain understanding of the main parts of a plant and role each performs	3.1	n/a	3.2	n/a
2. <i>Touch &amp; Tell</i> - To use information learned about plant parts to identify plant materials by touch	3.1	n/a	3.2	n/a
3. <i>Plant Parts We Eat</i> - To identify the various plant parts that are used for food	3.1; 3.3	n/a	3.2	3.16; 3.17
4. <i>Seed Science</i> - To use the scientific method to determine the effect on plant growth of removing the cotyledons from seeds	3.1	3.2; 3.11; 3.16	3.1; 3.2; 3.3; 3.5	n/a
5. <i>Flower Dissect</i> - To identify the different parts of a flower	3.1	n/a	3.2; 3.9	3.16; 3.17
1. <i>P.L.A.N.T. Needs</i> - To become familiar with plants' needs	3.1	n/a	3.2	3.16; 3.17
2. <i>What's Not the Same?</i> - To become familiar with variables and constants	3.1	3.11; 3.13; 3.15; 3.16	3.2; 3.3; 3.4; 3.5	n/a
3. <i>Plant People</i> - To show an understanding of plant needs through creative arts	3.1	3.11; 3.15	n/a	n/a
4. <i>Picture Yourself a Plant</i> - To show an understanding of plant needs through creative arts	3.1; 3.3	n/a	3.8	3.16; 3.17
1. <i>Coconut Flbat</i> - To illustrate the different ways seeds are dispersed	3.1	n/a	3.2; 3.8	n/a
2. <i>Plant Performance</i> - To develop an understanding of plant needs through creative writing	3.1; 3.14	n/a	n/a	3.17
3. <i>Topiary</i> - To create living, growing works of art	3.1	3.2; 3.15	3.1	n/a
4. <i>Power Seeds</i> - To observe the force seeds exhibit in the germination process	3.1	n/a	3.2; 3.5; 3.6	n/a
1. <i>Oxygen Factory</i> - To illustrate the process of photosynthesis	n/a	n/a	3.2; 3.5; 3.8	n/a
2. <i>Gas Gobblers</i> - To demonstrate the interdependence people and animals share with plants through the exchange of oxygen and carbon dioxide	n/a	3.2; 3.8	3.2; 3.3; 3.8	3.17
3. <i>Spinning Seeds</i> - To determine the effect of geotropism on plants	n/a	n/a	3.1; 3.2; 3.3; 3.5; 3.6	3.17
1. <i>Paper Pot</i> - To create recyclable pots and propagate plants by seed	3.1	n/a	3.1; 3.5	n/a
2. <i>Gallon Greenhouse</i> - To show an understanding of the environment needed to propagate plants	3.1	3.2	3.1; 3.5; 3.8	n/a
3. <i>Propagation Demonstration</i> - To demonstrate how to propagate plants by direct seeding, stem cuttings, leaf cuttings, root cuttings, division, and layering	n/a	3.11; 3.15	3.1; 3.5; 3.9	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Soils and Water

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Touchy Feely</i> - To understand soil texture and the properties of different soil types and soil particles	3.1; 3.3	n/a	3.2; 3.3; 3.7	n/a
2. <i>Mud Pies</i> - To feel the difference in soil textures	3.1	n/a	3.2; 3.7; 3.11	n/a
3. <i>Shake, Rattle, and Roll</i> - To identify amounts of soil particles that make up a soil's texture	3.1; 3.3; 3.4; 3.12	3.2	3.1; 3.2; 3.4; 3.7; 3.11	3.16; 3.17
4. <i>Candy Aggregate</i> - To create an edible model illustrating that soil is made up of many different components	3.1	n/a	3.3	n/a
1. <i>Nutrient Variable</i> - To use scientific method to study the effects of fertilizer on plant growth	3.1; ;3.3; 3.12	3.1; 3.2; 3.14; 3.15; 3.16	3.1; 3.2; 3.3; 3.4; 3.8	3.16; 3.18
2. <i>The Numbers on the Bag Song</i> - to gain an understanding of how nutrients in fertilizer help plants	3.1	n/a	n/a	n/a
3. <i>Bumps Below</i> - To become familiar with plants that produce their own nitrogen	3.1; 3.3; 3.12	n/a	3.2; 3.8; 3.9	n/a
1. <i>Building Bins &amp; Compost Sandwiches</i> - To build a composting bin for creating organic matter to amend soil	n/a	3.3; 3.11; 3.12; 3.13; 3.15	3.1; 3.5; 3.8; 3.11	n/a
2. Composting Critter Page - To identify organisms that are a part of the composting process.	3.1	n/a	3.2	3.16; 3.17
3. <i>Compost Sandwich Composition</i> - To compose a paragraph to support the claim that it is important to compost	3.1; 3.14; 3.15; 3.16; 3.17; 3.18	n/a	n/a	3.17
1. <i>Earth Apple</i> - To become familiar with plants' needs	3.1; 3.3; 3.4; 3.9	3.1; 3.2; 3.14; 3.16	3.3; 3.11	3.16
2. <i>Cloud Maker</i> - To demonstrate the process of condensation	3.1	n/a	3.3; 3.7	n/a
3. <i>Cycle Song</i> - To gain understanding of the water cycle through music	3.1	n/a	n/a	n/a
4. <i>Apple Rings &amp; Banana Chips</i> - To measure the amount of water in fruit	3.1; 3.3; 3.9; 3.12	3.1; 3.13; 3.14; 3.15; 3.16; 3.17	3.1; 3.2; 3.3; 3.4; 3.7	3.16; 3.17
1. <i>Out of the Spout</i> - To develop an understanding of how water moves through different soil textures	3.1	3.1; 3.13; 3.14; 3.15	3.2; 3.3; 3.4; 3.7; 3.11	n/a
2. <i>Where Did It Go?</i> - To demonstrate that water can be held in air spaces in the soil	3.1; 3.3	3.3; 3.13; 3.15; 3.17	3.2; 3.3; 3.7; 3.11	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

### Ecology and Environmental Horticulture

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Nature Class Web</i> - To create a web to understand the inter-relatedness of life on earth.	3.1; 3.3	n/a	3.1; 3.5; 3.8	3.17
2. <i>Food Chain Game</i> - To play a game represent the inter-relatedness of animals and the environment within the food chain.	3.1; 3.3	n/a	3.1; 3.5; 3.8	3.17; 3.18
3. <i>Polluting Your Planet</i> - To observe the effects of pollution on a model of the earth.	n/a	3.11	3.1; 3.2; 3.3; 3.8	3.17
4. <i>Exploding Cactus</i> - To demonstrate how cacti are able to store water.	3.1	n/a	3.5; 3.8; 3.10	n/a
5. <i>Garden Weather Station</i> - To create weather instruments and monitor weather conditions.	n/a	3.1; 3.3; 3.4; 3.10; 3.11; 3.12; 3.13; 3.15; 3.16;	3.2; 3.4	3.17
1. <i>The Tree Community</i> - To observe the variety of life supported by a single tree.	3.1; 3.2; 3.3	n/a	3.2; 3.4; 3.5; 3.8	3.17
2. <i>Gourd Bird House</i> - To grow and build habitats for birds using gourds.	n/a	n/a	n/a	n/a
3. <i>Our Pocket Park</i> - To beautify an outdoor area.	3.14; 3.15	3.11; 3.13; 3.15	3.1; 3.2; 3.4; 3.8	3.17
4. <i>Backyard Buddy</i> - To reward environmentally friendly	3.1	3.3	3.2	3.17
5. <i>Visit with a Vet</i> - To understand needs and habitats of animals in your community.	3.1	n/a	n/a	3.17
1. <i>On the Move</i> - To understand how pollution can create many indirect negative effects.	n/a	n/a	3.1; 3.2; 3.3; 3.5; 3.8	3.17
2. <i>Both Sides of the Fence</i> - To voice opinions in a debate format.	3.1; 3.3; 3.4; 3.14	n/a	3.1	3.15; 3.17; 3.18
3. <i>Weighing Wastes</i> - To measure amount of food wastes produced at a meal and work to reduce wastes for the future.	n/a	3.3; 3.4; 3.14; 3.15; 3.16	3.1; 3.2; 3.3; 3.4	3.16; 3.17; 3.18
4. <i>Let's Try Organic</i> - To implement organic gardening ideas into a garden setting.	n/a	n/a	3.1; 3.2; 3.5; 3.8	3.18
5. <i>Xeriscape</i> - To build a garden site using water conservation concepts.	n/a	n/a	3.1; 3.2; 3.3; 3.5; 3.8; 3.9	3.16; 3.17; 3.18
1. <i>Vermi-Composting</i> - To recycle food wastes with vermi-composting.	n/a	3.11; 3.15; 3.16	3.1; 3.2; 3.4; 3.5; 3.8	3.17
2. <i>Super Mowing Machine</i> - To utilize creativity to invent a new mowing machine.	3.1; 3.3	n/a	3.5	3.17
3. <i>Grow Cards</i> - To recycle newspaper to create plantable greeting cards.	3.14	n/a	3.1	3.17
4. <i>Know &amp; Show Recycling Sombrero</i> - To wear a work of art that displays materials that can be recycled.	n/a	n/a	3.1	n/a
1. <i>Plant Pounding</i> - To transfer the likeness of plant parts to fabric.	n/a	n/a	n/a	n/a
2. <i>Let's Dye It</i> - To color eggs or fabrics using dyes created from natural materials.	n/a	n/a	n/a	n/a
3. <i>Nature Windows</i> - To create art using natural materials.	3.14	3.11	n/a	3.17
4. <i>Garden Folk</i> - To build a scarecrow.	3.14	n/a	n/a	3.17
5. <i>Nature Masks</i> - To create wearable art using natural materials.	n/a	n/a	n/a	n/a
6. <i>Mother Nature's Children</i> - To create art using natural materials.	n/a	n/a	n/a	3.17

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Insects and Diseases

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Insect Predictions and Survey</i> - To predict insect characteristics and learn what all insects have in common.	3.1	3.3; 3.14	3.1; 3.2; 3.4; 3.8	3.17
2. <i>Insect Symmetry</i> - To learn and understand the concept of symmetry.	3.1	3.2; 3.9; 3.16	3.2	3.17
3. <i>The Great Cover-Up!</i> - To learn and understand the concept of camouflage.	3.1	n/a	3.9	3.17
4. <i>Designer Bugs</i> - To reinforce concepts learned about insects so far: their characteristics and the concepts of symmetry and camouflage.	3.1; 3.3; 3.4; 3.14	3.9	3.2	3.17
5. <i>Insect Riddles</i> - To reinforce basic concepts learned about insects so far, and to experiment with creative writing concepts by creating riddles.	3.14; 3.17; 3.18	n/a	n/a	3.17
6. <i>Secret Smells Game</i> - To discover how insects communicate using pheromones.	n/a	n/a	3.9	n/a
1. <i>All in the Family: Insect Flash Cards</i> - To learn that insects are organized in groups based on their characteristics. To learn the characteristics common to all insects and the characteristics specific to a few groups of insects, caterpillars.	3.1	n/a	3.2; 3.3; 3.9; 3.10	3.17
2. <i>Ordering Insects</i> - To learn to sort insects based on similarities and differences, and make a basic insect key.	n/a	3.16	3.2; 3.3; 3.9; 3.10	3.17
3. <i>Metamorphosis Bracelets and Belts</i> - To learn the stages of metamorphosis.	n/a	n/a	3.5; 3.9; 3.10	3.17
4. <i>Morpho Puppets</i> - To learn the stages of complete metamorphosis, and teach them to a younger group.	3.3	n/a	3.10	3.17
5. <i>JMG Web Activity: Journey North</i> - To gain familiarity with the Internet as a research tool.	3.14	n/a	3.2; 3.8; 3.9; 3.10	3.16; 3.17
1. <i>Suck-A-Bug</i> - To make a simple aspirator and use it to collect and observe small insects.	n/a	n/a	3.4	n/a
2. <i>It's a Small World</i> - To create Berkeley (Bur-ky-z) funnel and use it to collect and observe insects living in the ground and soil.	3.9; 3.14	3.12; 2.14; 3.16	3.1; 3.2; 3.4; 3.8	3.17
3. <i>Classroom Netting</i> - To make an insect net and use it to collect samples of insects by sweeping.	n/a	3.14; 3.16	3.1; 3.2; 3.4; 3.8	3.17
4. <i>By Land or By Sea</i> - To compare and contrast the types of insects living in different habitats.	3.3; 3.9	3.14; 3.16	3.1; 3.2; 3.4; 3.8	3.17; 3.18
5. <i>Classroom Ant Lion Farm</i> - To make a living collection of one type of insect and observe it closely as it builds its home.	3.14	3.16	3.1; 3.2; 3.4; 3.8	3.17; 3.18
1. <i>Chew on This!</i> - To learn the four types of insect mouthparts and how they are specialized.	n/a	n/a	3.9	n/a
2. <i>Schoolyard Survey</i> - To survey the schoolyard for signs of insect damage and to determine the types of insects that caused the damage.	3.9	3.14; 3.15; 3.16	3.1; 3.2; 3.4	3.17
3. <i>Pollinator Puppet Show</i> - To learn the basic process of insect pollination.	3.9	n/a	3.8; 3.9	3.17
4. <i>The Bartering System</i> - To learn how plants and insects trade services, and to become familiar with the concept of energy exchange.	n/a	3.3	3.1; 3.8; 3.9	n/a
5. <i>The Lone Bee</i> - To learn about solitary bees and create a bee home for them.	n/a	n/a	3.8	n/a
6. <i>Designer Plants and Insects</i> - To combine previously learned concepts in creating insects and plants that are designed to work together.	3.14; 3.15	n/a	3.2	3.17; 3.18

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Insects and Diseases (continued)

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Garden Friends and Foes</i> - To learn the difference between beneficial and pest insects, and to learn a few examples of each type.	n/a	n/a	3.2; 3.4	n/a
2. <i>Don't Bug Me!</i> - To identify pest insects of various organisms, and to discover the interrelatedness of all living organisms.	3.1; 3.9	n/a	3.2	3.17
3. <i>Who Goes There?</i> - To learn the basics of Integrated Pest Management (IPM), and to create a classroom IPM charting system.	3.9	n/a	3.2; 3.4; 3.8	3.17
4. <i>Buyer Beware</i> - To compare and contrast factual versus persuasive writing , and to gain practice reading labels.	3.1; 3.7; 3.14	n/a	3.1; 3.2; 3.3	3.16; 3.17; 3.18
5. <i>Critter Creations</i> - To learn the four types of beneficial insects and why they are considered beneficial.	3.1; 3.3; 3.14	n/a	n/a	3.17
1. <i>Exploratory Fungi</i> - To observe the variety of fungal spores present in the air.	3.1; 3.3; 3.4; 3.15; 3.17; 3.20	3.16	3.2; 3.4; 3.8; 3.9	3.17
2. <i>Yeast Bread</i> - To learn how one fungus - yeast - is used in cooking and what purpose it serves.	3.1	3.12	3.1; 3.15	n/a
3. <i>Lacy Leaves</i> - To observe organic matter (decaying leaves) being decomposed by fungi.	3.1	n/a	3.8	3.17
4. <i>Likin' those Lichens</i> - To learn what a lichen is and what a mutually beneficial relationship is.	3.1; 3.4; 3.14	n/a	3.2	3.17; 3.18
5. <i>Prescription for Prevention</i> - To learn the components of the disease triangle and the concept of IPM.	3.9; 3.10	n/a	3.1; 3.2; 3.5; 3.8	n/a
6. <i>There's a Fungus Among Us!</i> - To observe and identify fungi that act as pests in the garden.	3.9; 3.14; 3.15	n/a	3.2; 3.8; 3.9	3.17; 3.18

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Landscape Horticulture

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Rooms</i> - To understand that areas within a space serve a special purpose and to define those areas.	3.1	n/a	n/a	3.17
2. <i>People and Places</i> - To understand that different people use yard space differently.	3.3; 3.9	n/a	n/a	3.17; 3.18
3. <i>Money Trees</i> - To understand that trees help to save energy and money.	3.1	n/a	3.4	3.17
4. <i>Site Map</i> - To experience an initial step in the landscape design process.	n/a	3.3; 3.11; 3.13; 3.15; 3.16	3.2	3.17
1. <i>Nature Wheels</i> - To build a color wheel from items found in nature and understand the relationship of one color to another.	3.3; 3.14	n/a	3.2; 3.8	3.4; 3.16; 3.17; 3.18
2. <i>Texture Collection</i> - To understand how the design element, "texture," is used to visually create interest in the landscape.	3.1; 3.4; 3.14; 3.17	n/a	3.2; 3.7	3.17; 3.18
3. <i>Same Sides</i> - To understand the element of design, "balance," using symmetrical and asymmetrical visuals.	3.1; 3.3	3.9; 3.16	3.2	3.17; 3.18
4. <i>Does it Fit?</i> - To demonstrate understanding of the design element, "proportion."	n/a	3.4; 3.11; 3.13; 3.16	3.2	3.17; 3.18
1. <i>Tearing Trees</i> - Learning to identify trees based on their classification and shape.	3.12; 3.14	3.8; 3.16	3.2; 3.10	3.17; 3.18
2. <i>How Tall is that Tree?</i> - To measure the height of a large tree.	n/a	3.1; 3.3; 3.4; 3.11; 3.13; 3.15; 3.16	3.2; 3.3; 3.4	3.17
3. <i>Learning Your ABP's</i> - To understand plant classifications.	3.1	n/a	3.9; 3.10	3.17
4. <i>Great Green Grass</i> - Selection of grasses should be based upon care and maintenance requirements.	3.1; 3.3	n/a	3.2; 3.3; 3.8; 3.10	3.17; 3.18
1. <i>Arbor Day</i> - Understanding that trees are an important natural resource and ways people celebrate their friend, the tree.	3.1; 3.3	n/a	3.1; 3.2; 3.8	3.1; 3.17
2. <i>Do it Right</i> - To demonstrate through creative dramatics the proper way to plant a tree.	3.1; 3.3; 3.14	n/a	3.2	3.17
3. <i>Seed, Sod, &amp; Plugs</i> - To become familiar with different methods used in establishing a lawn.	3.3; 3.14	n/a	3.1; 3.2; 3.8; 3.9; 3.10	3.16; 3.17
1. <i>An Inch of Water</i> - Understanding lawnscape water use and water conservation and money saving through proper use of irrigation systems.	n/a	3.2; 3.3; 3.10; 3.11; 3.12; 3.13; 3.15; 3.16	3.1; 3.2; 3.3; 3.4; 3.11	3.17; 3.18
2. <i>Pruning Places</i> - To learn reasons why plants are pruned and proper pruning techniques.	n/a	3.11; 3.15	3.1; 3.2; 3.8; 3.10	n/a
3. <i>More Mulch, More Moist</i> - To study the effects of mulch on conserving water.	3.1	3.11; 3.13; 3.14; 3.15; 3.16	3.1; 3.2; 3.3; 3.4; 3.11	3.17; 3.18
4. <i>Queen Bud</i> - To learn the difference between terminal buds and lateral buds and their effects on plants.	3.1; 3.3	n/a	3.2; 3.3; 3.10	3.17

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Fruits and Nuts

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Dr. Fruit</i> - To research origins and relevant information about fruit and nuts	3.1; 3.2; 3.12	3.3; 3.14	n/a	3.17
2. <i>Linnaeus' Name It</i> - To become aware of the dependence all people have on plants	3.14	n/a	3.5; 3.10	3.1; 3.15
3. <i>Botanical Wood Prints</i> - To recreate a historical wood press	3.1	n/a	n/a	n/a
4. <i>A Bushel and a Peck</i> - To gain understanding of non-traditional measurements	3.1; 3.3; 3.12	3.3; 3.7; 3.13; 3.15; 3.16	3.2	n/a
5. <i>Fruit and Vegetable Lab</i> - To learn what a fruit is, and to explore the difference between technical definitions and social customs.	3.1; 3.2; 3.9; 3.12	n/a	3.2; 3.3	3.1
1. <i>Snooty Fruit</i> - To identify various fruits and nuts using sense of smell	3.1; 3.15; 3.16	n/a	3.2	n/a
2. <i>Apple-ing Appearance</i> - To create an instrument to evaluate apples on shape and color, and contrast results with evaluation based on taste	3.1; 3.12; 3.14; 3.15	3.2; 3.3	3.2	n/a
3. <i>Taste Test</i> - To evaluate fruit based on color, texture, taste, and smell	3.1; 3.12	n/a	3.2	n/a
4. <i>JMG Jam</i> - To use measurements to create a fruit product	3.1; 3.3; 3.9; 3.12	3.12; 3.13; 3.15	3.1; 3.2; 3.7	n/a
5. <i>Johnny's Applesop</i> - To gain understanding of the main parts of a plant and role each performs	3.1; 3.3	3.12; 3.13; 3.15	n/a	3.1; 3.13
1. <i>A Fruit's Life Rhyme</i> - To gain understanding of the life cycle of plants	3.1; 3.3	n/a	n/a	n/a
2. <i>Fruit Frenzy</i> - To become familiar with the way fruits and vegetables develop around seeds	3.1; 3.3	3.3	3.2	n/a
3. <i>The Zones</i> - To identify the appropriate plants for a particular temperature zone	3.1	n/a	3.2	3.5
4. <i>Just Chill</i> - To simulate a winter environment to provide chilling requirement for an apple seed	3.1; 3.3	n/a	3.2	n/a
5. <i>Fruit Factory</i> - To use reference material to choose a fruit or nut tree to plant or transplant	3.1; 3.3	n/a	3.2	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Vegetables and Herbs

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Home Sweet Home</i> - To understand the criteria for selecting a good garden site and to select an appropriate garden site based on those criteria.	3.1	n/a	3.2; 3.8	3.4; 3.17; 3.18
2. <i>Make Your Pick</i> - To select appropriate crops for planting based on season.	3.1; 3.9	n/a	3.2; 3.8; 3.9	3.16; 3.17
3. <i>Small and Large</i> - To gain an understanding of space considerations when planting seeds.	n/a	3.1; 3.11; 3.13; 3.15; 3.16	3.2; 3.3; 3.4; 3.8; 3.10	3.5; 3.16; 3.17; 3.18
4. <i>Rules are Rules</i> - To establish rules for the garden that make it a safer place to learn.	3.1; 3.2; 3.14	n/a	n/a	3.17; 3.18
5. <i>Schedule It</i> - To establish a schedule where all learners take part in maintaining the watering and weeding of the garden.	n/a	3.4; 3.13; 3.15	3.2; 3.8	3.16; 3.17; 3.18
6. <i>Some Like It Hot</i> - To distinguish between warm season and cool season crops.	3.9	n/a	3.8; 3.9	n/a
1. <i>Cylinder Gardening</i> - To successfully grow vegetables and herbs in containers.	n/a	3.11; 3.13; 3.15	3.1; 3.2; 3.3; 3.4; 3.5; 3.8	3.18
2. <i>Paper Towel Gardening</i> - To create seed mats and transplant templates which will aid in organizing and laying out the garden.	n/a	3.2; 3.11; 3.15; 3.16	3.3	3.16; 3.17; 3.18
3. <i>Tender Transplants</i> - To understand the benefits and practice techniques of transplanting.	3.1	3.11; 3.13	3.1; 2.8; 3.11	3.17
4. <i>Weed Mats</i> - To create a natural form of weed control.	3.1; 3.9	n/a	3.1; 3.3; 3.8	3.17
5. <i>Season Extenders</i> - To create an environment for plants.	n/a	n/a	3.3; 3.8	3.15; 3.17; 3.18
1. <i>The Pyramid</i> - To use the Food Guide Pyramid to plan balanced meals.	n/a	3.8; 3.15	3.2	3.17; 3.18
2. <i>Food Safety</i> - To understand and practice food safety rules.	3.1	n/a	3.1; 3.2; 3.8; 3.9	3.17
3. <i>Label Reader</i> - To learn the importance of eating breakfast and how to make healthy food choices by using information found on food labels.	3.1; 3.4; 3.7; 3.9; 3.10; 3.12	3.2; 3.7; 3.14; 3.15; 3.16	3.2; 3.3; 3.9	3.16; 3.17; 3.18
4. <i>Veggie Taste Test</i> - To evaluate vegetables based on color, texture, taste and smell.	3.1	n/a	3.2	3.17
1. <i>Garden to the Table</i> - To determine harvest time of various garden vegetables.	n/a	n/a	3.1	n/a
2. <i>Beauty Contest</i> - To rank vegetables based on appearance.	3.1; 3.2; 3.14	n/a	3.2	3.17
1. <i>Garden Vegetable Casserole</i> - To create a casserole with vegetables from your garden.	n/a	3.2; 3.15	3.1	n/a
2. <i>Veggie Pizza</i> - To use the Food Guide Pyramid to plan balanced meals.	n/a	3.2; 3.15	3.1	3.17
3. <i>Salad Supper</i> - To use the Food Guide Pyramid to plan balanced meals.	3.1	3.14; 3.15; 3.16	3.1; 3.2	3.16; 3.17
4. <i>Cultural Cooking</i> - To plan, plant, and harvest a theme garden that will grow ingredients for a recipe from different cultures.	n/a	n/a	n/a	3.12; 3.16
5. <i>Garden Sponge</i> - To grow and harvest a crop of boba sponges.	n/a	n/a	3.5	3.16; 3.17
1. <i>Touch and Smell</i> - To identify herbs based on the sense of touch and smell.	3.1	n/a	3.2	3.17
2. <i>Herbal Vinegar</i> - To make and bottle herbal vinegar.	n/a	n/a	3.1	n/a
3. <i>Herb Bath Salts</i> - To prepare herb bath salts wraps.	n/a	3.15	n/a	n/a
4. <i>Herb Sachets</i> - To create herb sachets from dried herbs.	n/a	3.10; 3.11; 3.12; 3.15	3.1	n/a



# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Life Skills and Career Exploration

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Who are You?</i> - To understand the many roles we have in life and begin to understand that each member is a very unique and special person.	3.1; 3.2; 3.4; 3.14; 3.15; 3.17	3.16	n/a	3.17
2. <i>"What are you like?"</i> - To help members examine their feelings, self-concepts, and values as they make choices.	3.1; 3.2; 3.14	n/a	n/a	3.17
3. <i>Know Your JMG Friends</i> - Youth will recognize positives in their fellow students.	3.1; 3.4	n/a	n/a	n/a
4. <i>Good JMG'ers Wanted Posters</i> - Confirm each student's uniqueness by having them take their own fingerprints.	3.1	n/a	n/a	3.17; 3.18
5. <i>How would you feel?</i> - To understand that how you treat other people is very important.	3.1; 3.2; 3.4	n/a	n/a	3.17
6. <i>Feeling Bee</i> - Youth will recognize that others have some of the same feelings they do in certain situations.	3.1; 3.2; 3.4; 3.14; 3.15; 3.17	n/a	n/a	n/a
1. <i>Where's My Fruit?</i> - To demonstrate the importance of sharing with your friends.	3.1	3.2; 3.15	n/a	3.17; 3.18
2. <i>Let's Build It</i> - To explain the importance of cooperation in a group situation.	3.1; 3.3; 3.4; 3.14; 3.17	n/a	n/a	3.17; 3.18
3. JMG Cooperation Roster - To explain the importance of cooperation in a group situation.	3.12	n/a	n/a	3.17
4. <i>Musical Chairs with a Twist</i> - To explain the importance of cooperation and sharing in a group.	3.1	n/a	n/a	n/a
5. <i>Over and Under</i> - To illustrate group cooperation in a competitive situation.	3.1	n/a	n/a	n/a
6. <i>Cooperation Countdown</i> - To demonstrate the importance of cooperation in a group.	3.1	n/a	n/a	n/a
1. <i>Garden Shed</i> - To develop listening/communication skills. Helps with memory tasks.	3.1	n/a	n/a	n/a
2. <i>Who's Who on Our Team?</i> - To identify and practice different modes and methods of communication.	3.1; 3.4; 3.12; 3.14	n/a	n/a	3.17
3. <i>Can You Follow Me?</i> - To identify and practice different methods of communication.	3.1	3.9	n/a	3.17
4. <i>Plant a Seed</i> - To demonstrate the importance of clear verbal communication.	3.1; 3.4; 3.14; 3.15; 3.17	n/a	n/a	3.17
1. <i>Goal Search</i> - To teach members what a goal is.	3.1; 3.4; 3.14	n/a	n/a	3.17
2. <i>Right on Target</i> - To demonstrate the skills needed for goal setting and construct personal goals.	3.1; 3.4	3.3	n/a	3.17
3. <i>The Class/Club Chronicle</i> - To write appropriate short-term personal goals.	3.14; 3.15; 3.18	n/a	n/a	3.17
4. <i>Watch Me Grow</i> - To discuss the different types of goals: short-range and long-range.	3.2	n/a	n/a	3.17

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 3

#### Life Skills and Career Exploration (continued)

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Making a Machine</i> - To teach group cooperation and the importance of each member's role.	3.1	n/a	3.5	3.17
2. <i>Create a Costume</i> - To stimulate creative thinking and to implement the group decision-making process	3.3	n/a	n/a	3.17
3. <i>Pass It On!</i> - To facilitate group members getting to know each other.	3.1; 3.3; 3.4; 3.6; 3.9; 3.14; 3.15; 3.17	n/a	n/a	3.17
4. <i>Either/Or</i> - To explain the decision-making process.	3.1	n/a	3.2	3.17
5. <i>Let's Make a Case Out of It</i> - To explain how the decision-making process works with a group decision	3.1; 3.3; 3.4	n/a	3.2	3.17; 3.18
6. <i>It's in the Bag</i> - To understand the importance of gathering information for decision-making and problem solving.	3.1; 3.4; 3.14; 3.15; 3.17	n/a	3.2	3.17
1. <i>Shared Responsibility</i> - To understand their responsibility to a group and its members	3.1; 3.3	n/a	n/a	3.17
2. <i>Consequences</i> - To understand self-responsibility.	3.1	n/a	3.2	3.17; 3.18
3. <i>Touchdown</i> - To set responsibility goals to work toward.	3.1; 3.9	3.3	n/a	n/a
4. <i>Don't Stamp Me</i> - To determine whether stereotypes influence how they act and respond to situations.	3.1; 3.3	n/a	n/a	3.17
1. <i>Careers and School</i> - To compare and contrast school and the world of work.	3.1; 3.9; 3.14; 3.15; 3.17; 3.20	n/a	n/a	n/a
2. <i>Career Teams</i> - To analyze various careers in terms of group or individual involvement.	3.1	n/a	n/a	n/a
3. <i>When I Grow Up</i> - To become aware of the choices they will make when choosing a career.	3.9	n/a	n/a	n/a
4. <i>Dream House</i> - To identify impact of various careers on their world.	3.1; 3.9	n/a	n/a	3.17
5. <i>All for One</i> - To identify careers that operate independently and those that operate as a team.	3.1	n/a	n/a	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

#### Plant Growth and Development

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Ham burger Plant?</i> - To become aware of dependence on plants as the originator of most food sources	4.2; 4.5; 4.13; 4.15	n/a	4.2	4.23
2. <i>Benefits Mobile</i> - To be aware of the dependence all people have on plants	4.2; 4.13	n/a	4.2; 4.5	4.23
3. <i>Know &amp; Show Sombrero</i> - To show an understanding of the benefits of plants to people	n/a	n/a	4.2	4.23
4. <i>The Medicine Plant</i> - To recognize the medicinal properties of the abe vera plant	n/a	n/a	n/a	n/a
5. <i>Choo-Choo Song</i> - To associate a variety of plants with their food products by learning a song	n/a	n/a	n/a	n/a
1. <i>Leaves &amp; Seeds Sort Info Chart</i> - To be able to classify leaves and seeds as monocots & dicots	4.1	4.2	4.2	4.23
1. <i>Plant Parts Rap</i> - To gain understanding of the main parts of a plant and role each performs	n/a	n/a	4.2	n/a
2. <i>Touch &amp; Tell</i> - To use information learned about plant parts to identify plant materials by touch	n/a	n/a	4.2	n/a
3. <i>Plant Parts We Eat</i> - To identify the various plant parts that are used for food	n/a	n/a	4.2	4.22; 4.23
4. <i>Seed Science</i> - To use the scientific method to determine the effect on plant growth of removing the cotyledons from seeds	n/a	4.15	4.2; 4.3; 4.5	n/a
5. <i>Flower Dissect</i> - To identify the different parts of a flower	n/a	n/a	4.2	4.23
1. <i>P.L.A.N.T. Needs</i> - To become familiar with plants' needs	n/a	n/a	4.2	4.23
2. <i>What's Not the Same?</i> - To become familiar with variables and constants	n/a	4.12; 4.14; 4.15	4.2; 4.3; 4.4; 4.5; 4.10	n/a
3. <i>Plant People</i> - To show an understanding of plant needs through creative arts	n/a	4.11; 4.14	4.1	n/a
4. <i>Picture Yourself a Plant</i> - To show an understanding of plant needs through creative arts	4.5	n/a	4.5	4.23
1. <i>Coconut Flbat</i> - To illustrate the different ways seeds are dispersed	n/a	n/a	4.2	n/a
2. <i>Plant Performance</i> - To develop an understanding of plant needs through creative writing	4.15	n/a	n/a	4.23
3. <i>Topiary</i> - To create living, growing works of art	n/a	4.14	4.1	n/a
4. <i>Power Seeds</i> - To observe the force seeds exhibit in the germination process	n/a	n/a	4.2; 4.10	n/a
1. <i>Oxygen Factory</i> - To illustrate the process of photosynthesis	n/a	n/a	4.2; 4.5	n/a
2. <i>Gas Gobblers</i> - To demonstrate the interdependence people and animals share with plants through the exchange of oxygen and carbon	n/a	n/a	4.2; 4.3	4.23
3. <i>Spinning Seeds</i> - To determine the effect of geotropism on plants	n/a	n/a	4.1; 4.2; 4.3	4.23
1. <i>Paper Pot</i> - To create recyclable pots and propagate plants by seed	n/a	n/a	4.1	n/a
2. <i>Gallon Greenhouse</i> - To show an understanding of the environment needed to propagate plants	n/a	n/a	4.1; 4.10	n/a
3. <i>Propagation Demonstration</i> - To demonstrate how to propagate plants by direct seeding, stem cuttings, leaf cuttings, root cuttings, division, and layering	n/a	4.14	4.1; 4.5; 4.8; 4.10	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

### Soils and Water

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Touchy Feely</i> - To understand soil texture and the properties of different soil types and soil particles	n/a	n/a	4.2; 4.3; 4.7; 4.10; 4.11	n/a
2. <i>Mud Pies</i> - To feel the difference in soil textures	4.2	n/a	4.2; 4.7; 4.11	n/a
3. <i>Shake, Rattle, and Roll</i> - To identify amounts of soil particles that make up a soil's texture	4.1; 4.2; 4.13	4.11	4.1; 4.2; 4.4; 4.7	4.22; 4.23
4. <i>Candy Aggregate</i> - To create an edible model illustrating that soil is made up of many different	n/a	n/a	4.3	n/a
1. <i>Nutrient Variable</i> - To use scientific method to study the effects of fertilizer on plant growth	4.2; 4.13	4.1; 4.11; 4.14	4.1; 4.2; 4.3; 4.4; 4.10	4.22; 4.23; 4.24
2. <i>The Numbers on the Bag Song</i> - to gain an understanding of how nutrients in fertilizer help plants	n/a	n/a	n/a	n/a
3. <i>Bumps Below</i> - To become familiar with plants that produce their own nitrogen	4.2; 4.13	n/a	4.2; 4.8	n/a
1. <i>Building Bins &amp; Compost Sandwiches</i> - To build a composting bin for creating organic matter to amend soil	n/a	4.3; 4.12; 4.14	4.1; 4.5; 4.8; 4.10; 4.11	n/a
2. <i>Composting Critter Page</i> - To identify organisms that are a part of the composting process.	4.1	n/a	4.2	4.22; 4.23
3. <i>Compost Sandwich Composition</i> - To compose a paragraph to support the claim that it is important to compost	4.15; 4.16; 4.17; 4.18; 4.19	n/a	n/a	4.23
1. <i>Earth Apple</i> - To become familiar with plants' needs	4.2; 4.10	4.1; 4.2; 4.14; 4.15	4.3; 4.11	4.22
2. <i>Cloud Maker</i> - To demonstrate the process of condensation	4.2	n/a	4.3; 4.7	n/a
3. <i>Cycle Song</i> - To gain understanding of the water cycle through music	n/a	n/a	n/a	n/a
4. <i>Apple Rings &amp; Banana Chips</i> - To measure the amount of water in fruit	4.2; 4.10; 4.13	4.1; 4.3; 4.11; 4.14; 4.15; 4.16	4.1; 4.2; 4.3; 4.4; 4.7	4.23
1. <i>Out of the Spout</i> - To develop an understanding of how water moves through different soil textures	n/a	4.11; 4.12; 4.14; 4.15	4.2; 4.3; 4.4; 4.11	n/a
2. <i>Where Did It Go?</i> - To demonstrate that water can be held in air spaces in the soil	n/a	4.3; 4.11; 4.14; 4.16	4.2; 4.3; 4.11	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

#### Ecology and Environmental Horticulture

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Nature Class Web</i> - To create a web to understand the inter-relatedness of life on earth.	4.3	n/a	4.1; 4.5	4.23
2. <i>Food Chain Gang</i> - To play a game represent the inter-relatedness of animals and the environment within the food chain.	n/a	n/a	4.1; 4.5	4.23; 4.24
3. <i>Polluting Your Planet</i> - To observe the effects of pollution on a model of the earth.	n/a	4.11	4.1; 4.2; 4.3; 4.5; 4.10	4.23
4. <i>Exploding Cactus</i> - To demonstrate how cacti are able to store water.	n/a	n/a	4.5	n/a
5. <i>Garden Weather Station</i> - To create weather instruments and monitor weather conditions.	n/a	4.1; 4.3; 4.4; 4.11; 4.12; 4.14; 4.15	4.2; 4.4; 4.6	4.23
1. <i>The Tree Community</i> - To observe the variety of life supported by a single tree.	4.1; 4.4	n/a	4.2; 4.4; 4.5	4.23
2. <i>Gourd Bird House</i> - To grow and build habitats for birds using gourds.	n/a	n/a	n/a	n/a
3. <i>Our Pocket Park</i> - To beautify an outdoor area.	4.15; 4.16; 4.17	4.12; 4.14	4.1; 4.2; 4.4	4.23
4. <i>Backyard Buddy</i> - To reward environmentally friendly	4.1	4.3	4.2	4.23
5. <i>Visit with a Vet</i> - To understand needs and habits of animals in your community.	4.1	n/a	n/a	4.23
1. <i>On the Move</i> - To understand how pollution can create many indirect negative effects.	n/a	n/a	4.1; 4.2; 4.3; 4.5; 4.8; 4.10	4.23
2. <i>Both Sides of the Fence</i> - To voice opinions in a debate format.	4.1; 4.2; 4.5; 4.15	n/a	4.1; 4.5	4.21; 4.23; 4.24
3. <i>Weighing Wastes</i> - To measure amount of food wastes produced at a meal and work to reduce wastes for the future.	n/a	4.3; 4.4; 4.11; 4.14; 4.15	4.1; 4.2; 4.3; 4.4	4.22; 4.23; 4.24
4. <i>Let's Try Organic</i> - To implement organic gardening ideas into a garden setting.	n/a	n/a	4.1; 4.2; 4.5; 4.8	4.24
5. <i>Xeriscape</i> - To build a garden site using water conservation concepts.	n/a	n/a	4.1; 4.2; 4.4; 4.5; 4.10	4.22; 4.23; 4.24
1. <i>Vermi-Composting</i> - To recycle food wastes with vermi-composting.	n/a	4.12; 4.14; 4.15	4.1; 4.2; 4.4; 4.5; 4.10	4.23
2. <i>Super Mowing Machine</i> - To utilize creativity to invent a new mowing machine.	4.5	n/a	4.5	4.23
3. <i>Grow Cards</i> - To recycle newspaper to create plantable greeting cards.	4.15	4.11	4.1	4.23
4. <i>Know &amp; Show Recycling Sombrero</i> - To wearable works of art that displays materials that can be recycled.	n/a	n/a	4.1	n/a
1. <i>Plant Pounding</i> - To transfer the likeness of plant parts to fabric.	n/a	n/a	n/a	n/a
2. <i>Let's Dye It</i> - To color eggs or fabrics using dyes created from natural materials.	n/a	4.11	n/a	n/a
3. <i>Nature Windows</i> - To create art using natural materials.	4.15	4.12	n/a	4.23
4. <i>Garden Folk</i> - To build a scarecrow.	4.15	n/a	n/a	4.23
5. <i>Nature Masks</i> - To create wearable art using natural materials.	n/a	n/a	n/a	n/a
6. <i>Mother Nature's Children</i> - To create art using natural materials.	n/a	n/a	n/a	4.23

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

#### Insects and Diseases

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Insect Predictions and Survey</i> - To predict insect characteristics and learn what all insects have in common.	4.1	4.3	4.1; 4.2; 4.4	4.23
2. <i>Insect Symmetry</i> - To learn and understand the concept of symmetry.	4.1	4.2; 4.69; 4.15	4.2; 4.6	4.23
3. <i>The Great Cover-Up!</i> - To learn and understand the concept of camouflage.	4.1	n/a	4.8	4.23
4. <i>Designer Bugs</i> - To reinforce concepts learned about insects so far: their characteristics and the concepts	4.1; 4.5; 4.15	n/a	4.2	4.23
5. <i>Insect Riddles</i> - To reinforce basic concepts learned about insects so far, and to experiment with creative writing concepts by creating riddles.	4.15; 4.19	n/a	n/a	4.23
6. <i>Secret Smells Game</i> - To discover how insects communicate using pheromones.	n/a	n/a	4.8	n/a
1. <i>All in the Family: Insect Flash Cards</i> - To learn that insects are organized in groups based on their characteristics. To learn the characteristics common to all insects and the characteristics specific to a few groups of insects, ca	4.1	n/a	4.2; 4.3; 4.8	4.23
2. <i>Ordering Insects</i> - To learn to sort insects based on similarities and differences, and make a basic insect key.	n/a	4.15	4.2; 4.3; 4.8; 4.9	4.23
3. <i>Metamorphosis Bracelets and Belts</i> - To learn the stages of metamorphosis.	n/a	n/a	4.6; 4.8; 4.9	4.23
4. <i>Morpho Puppets</i> - To learn the stages of complete metamorphosis, and teach them to a younger group.	4.5	n/a	4.6; 4.8; 4.10	4.23
5. <i>JM G Web Activity: Journey North</i> - To gain familiarity with the Internet as a research tool.	4.15	n/a	4.2; 4.6; 4.8; 4.10	4.22; 4.23
1. <i>Suck-A-Bug</i> - To make a simple aspirator and use it to collect and observe small insects.	n/a	n/a	4.4	n/a
2. <i>It's a Small World</i> - To create Berkeley (Bur-ky-z) funnel and use it to collect and observe insects living in the ground and soil.	4.10; 4.15	4.12; 4.15	4.1; 4.2; 4.4; 4.11	4.23
3. <i>Classroom Netting</i> - To make an insect net and use it to collect samples of insects by sweeping.	n/a	4.15	4.1; 4.2; 4.4	4.23
4. <i>By Land or By Sea</i> - To compare and contrast the types of insects living in different habitats.	4.5; 4.10	4.15	4.1; 4.2; 4.4	4.23; 4.24
5. <i>Classroom Ant Lion Farm</i> - To make a living collection of one type of insect and observe it closely as it builds its home.	4.15	4.15	4.1; 4.2; 4.4; 4.8	4.23; 4.24
1. <i>Chew on This!</i> - To learn the four types of insect mouthparts and how they are specialized.	n/a	n/a	4.8	n/a
2. <i>Schoolyard Survey</i> - To survey the schoolyard for signs of insect damage and to determine the types of insects that caused the damage.	4.1	4.14; 4.15	4.1; 4.2; 4.4	4.23
3. <i>Pollinator Puppet Show</i> - To learn the basic process of insect pollination.	4.1	n/a	4.8	4.23
4. <i>The Bartering System</i> - To learn how plants and insects trade services, and to become familiar with the concept of energy exchange.	n/a	4.3	4.1; 4.8	n/a
5. <i>The Lone Bee</i> - To learn about solitary bees and create a bee home for them.	n/a	n/a	n/a	n/a
6. <i>Designer Plants and Insects</i> - To combine previously learned concepts in creating insects and plants that are designed to work together.	4.15; 4.16	n/a	4.2	4.23; 4.24

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

### Insects and Diseases (continued)

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Garden Friends and Foes</i> - To learn the difference between beneficial and pest insects, and to learn a few examples of each type.	n/a	n/a	4.2; 4.4	n/a
2. <i>Don't Bug Me!</i> - To identify pest insects of various organisms, and to discover the interrelatedness of all living organisms.	4.1; 4.10	n/a	4.2; 4.6	4.23
3. <i>Who Goes There?</i> - To learn the basics of Integrated Pest Management (IPM), and to create a classroom IPM charting system.	4.1	n/a	4.2; 4.4	4.23
4. <i>Buyer Beware</i> - To compare and contrast factual versus persuasive writing, and to gain practice reading labels.	4.1; 4.8; 4.15	n/a	4.1; 4.2; 4.3	4.22; 4.23; 4.24
5. <i>Critter Creations</i> - To learn the four types of beneficial insects and why they are considered beneficial.	4.1; 4.5; 4.15	n/a	n/a	4.23
1. <i>Exploratory Fungi</i> - To observe the variety of fungal spores present in the air.	4.1; 4.5; 4.16; 4.18; 4.21	4.15	4.2; 4.4; 4.8; 4.10	4.23
2. <i>Yeast Bread</i> - To learn how one fungus - yeast - is used in cooking and what purpose it serves.	4.1	4.11; 4.12; 4.14	4.1; 4.5; 4.10	n/a
3. <i>Lacy Leaves</i> - To observe organic matter (decaying leaves) being decomposed by fungi.	4.1	n/a	4.8; 4.5; 4.10	4.23
4. <i>Likin' those Lichens</i> - To learn what a lichen is and what a mutually beneficial relationship is.	4.1; 4.15	n/a	4.2	4.23; 4.24
5. <i>Prescription for Prevention</i> - To learn the components of the disease triangle and the concept of IPM.	4.10; 4.11	n/a	4.1; 4.2; 4.5; 4.8	n/a
6. <i>There's a Fungus Among Us!</i> - To observe and identify fungi that attack pests in the garden.	4.10; 4.15; 4.16	n/a	4.2; 4.8	4.23; 4.24

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

#### Landscape Horticulture

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Room s</i> - To understand that areas within a space serve a special purpose and to define those areas.	4.1	n/a	n/a	4.23
2. <i>People and Places</i> - To understand that different people use yard space differently.	4.5; 4.10	n/a	n/a	4.23; 4.24
3. <i>Money Trees</i> - To understand that trees help to save energy and money.	4.1	n/a	4.4	4.23
4. <i>Site Map</i> - To experience an initial step in the landscape design process.	n/a	4.3; 4.12; 4.14; 4.15	4.2	4.23
1. <i>Nature Wheels</i> - To build a cobr wheel from items found in nature and understand the relationship of one	4.5; 4.15	n/a	4.2; 4.8	4.6; 4.7; 4.22; 4.23; 4.24
2. <i>Texture Collection</i> - To understand how the design element, "texture," is used to visually create interest in the landscape.	4.1; 4.15; 4.18	n/a	4.2	4.23; 4.24
3. <i>Same Sides</i> - To understand the element of design, "balance," using symmetrical and asymmetrical visuals.	4.1; 4.5	4.9; 4.15	4.2	4.23; 4.24
4. <i>Does it Fit?</i> - To demonstrate understanding of the design element, "proportion."	n/a	4.4; 4.12; 4.15	4.2	4.23; 4.24
1. <i>Tearing Trees</i> - Learning to identify trees based on their classification and shape.	4.13; 4.15	4.15	4.2	4.23; 4.24
2. <i>How Tall is that Tree?</i> - To measure the height of a large tree.	n/a	4.1; 4.3; 4.4; 4.12; 4.14; 4.15	4.2; 4.3; 4.4	4.23
3. <i>Learning Your ABP's</i> - To understand plant classifications.	4.1	n/a	4.8; 4.10	4.23
4. <i>Great Green Grass</i> - Selection of grasses should be based upon care and maintenance requirements.	4.1; 4.5	n/a	4.2; 4.3; 4.5; 4.8; 4.10	4.23; 4.24
1. <i>Arbor Day</i> - Understanding that trees are an important natural resource and ways people celebrate their friend, the tree.	4.1; 4.5	n/a	4.1; 4.2	4.23
2. <i>Do it Right</i> - To demonstrate through creative dramatics the proper way to plant a tree.	4.1; 4.5; 4.15	n/a	4.2	4.23
3. <i>Seed, Sod, &amp; Plugs</i> - To become familiar with different methods used in establishing a lawn.	4.5; 4.15	n/a	4.1; 4.2; 4.8; 4.10	4.22; 4.23
1. <i>An Inch of Water</i> - Understanding lawn landscape water use and water conservation and money saving through proper use of irrigation systems.	n/a	4.2; 4.3; 4.10; 4.12; 4.14; 4.15	4.1; 4.2; 4.3; 4.4; 4.10; 4.11	4.23; 4.24
2. <i>Pruning Places</i> - To learn reasons why plants are pruned and proper pruning techniques.	n/a	4.14	4.1; 4.2; 4.8; 4.10	n/a
3. <i>More Muck, More Moist</i> - To study the effects of muck on conserving water.	4.1	4.1; 4.14; 4.15	4.1; 4.2; 4.3; 4.4; 4.7; 4.10; 4.11	4.23; 4.24
4. <i>Queen Bud</i> - To learn the difference between terminal buds and lateral buds and their effects on plants.	4.1; 4.5	n/a	4.2; 4.3; 4.10	4.23



# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

#### Fruits and Nuts

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Dr. Fruit</i> - To research origins and relevant information about fruit and nuts	4.1; 4.4; 4.13	4.3; 4.13	n/a	4.23
2. <i>Linnaeus' Name It</i> - To become aware of the dependence all people have on plants	4.2; 4.15; 4.22	n/a	4.3	n/a
3. <i>Botanical Wood Prints</i> - To recreate a historical wood press	4.1; 4.2	4.3; 4.11; 4.14; 4.15	n/a	n/a
4. <i>A Bushel and a Peck</i> - To gain understanding of non-traditional measurements	4.1; 4.2; 4.13	n/a	4.2	n/a
5. <i>Fruit and Vegetable Lab</i> - To learn what a fruit is, and to explore the difference between technical definitions and social customs.	4.1; 4.2; 4.4; 4.10; 4.13	n/a	4.2; 4.3	n/a
1. <i>Snooty Fruit</i> - To identify various fruits and nuts using sense of smell	4.1; 4.16; 4.17	n/a	4.2	n/a
2. <i>Apple-ing Appearance</i> - To create an instrument to evaluate apples on shape and color, and contrast	4.1; 4.2; 4.13; 4.15; 4.16	4.3	4.2	n/a
3. <i>Taste Test</i> - To evaluate fruit based on color, texture, taste, and smell	4.1; 4.13	n/a	4.2	n/a
4. <i>JMG Jam</i> - To use measurements to create a fruit product	4.1; 4.2; 4.5; 4.13	4.11; 4.14	4.1; 4.2; 4.7	n/a
5. <i>Johnny's Applesop</i> - To gain understanding of the main parts of a plant and role each performs	4.1; 4.2; 4.13	4.11; 4.14	n/a	n/a
1. <i>A Fruit's Life Rhyme</i> - To gain understanding of the life cycle of plants	4.1; 4.2; 4.5	n/a	n/a	n/a
2. <i>Fruit Frenzy</i> - To become familiar with the way fruits and vegetables develop around seeds	4.1; 4.2	4.3	4.2	n/a
3. <i>The Zones</i> - To identify the appropriate plants for a particular temperature zone	4.1; 4.2	n/a	4.2	4.6
4. <i>Just Chill</i> - To simulate a winter environment to provide chilling requirement for an apple seed	4.1; 4.2; 4.5	n/a	4.2	n/a
5. <i>Fruit Factory</i> - To use reference material to choose a fruit or nut tree to plant or transplant	4.1; 4.2	n/a	4.2	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

#### Vegetables and Herbs

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Home Sweet Home</i> - To understand the criteria for selecting a good garden site and to select a plan.	4.5	n/a	4.2; 4.5	4.23; 4.24
2. <i>Make Your Pick</i> - To select appropriate crops for planting based on season.	4.1	n/a	4.2; 4.6; 4.8	4.22; 4.23
3. <i>Small and Large</i> - To gain an understanding of space considerations when planting seeds.	n/a	4.1; 4.12; 4.14; 4.15	4.2; 4.3; 4.4; 4.8	4.6; 4.22; 4.23; 4.24
4. <i>Rules are Rules</i> - To establish rules for the garden that make it a safer place to learn.	4.4; 4.15	n/a	n/a	4.23; 4.24
5. <i>Schedule It</i> - To establish a schedule where all learners take part in maintaining the watering and weeding of the garden.	n/a	4.4; 4.12	4.2; 4.5	4.22; 4.23; 4.24
6. <i>Some Like It Hot</i> - To distinguish between warm season and cool season crops.	4.10	n/a	4.8	n/a
1. <i>Cylinder Gardening</i> - To successfully grow vegetables and herbs in containers.	n/a	4.12; 4.14	4.1; 4.2; 4.3; 4.4; 4.5; 4.10	4.24
2. <i>Paper Towel Gardening</i> - To create seed mats and transplant templates which will aid in organizing and laying out the garden.	n/a	4.2; 4.12; 4.14; 4.15	4.3	4.22; 4.23; 4.24
3. <i>Tender Transplants</i> - To understand the benefits and practice techniques of transplanting.	4.5	4.12	4.1; 4.5; 4.8; 4.10	4.23
4. <i>Weed Mats</i> - To create a natural form of weed control.	4.10	n/a	4.1; 4.3; 4.8; 4.10	4.23
5. <i>Season Extenders</i> - To create an environment for plants.	n/a	n/a	4.3; 4.6; 4.8	4.21; 4.23; 4.24
1. <i>The Pyramid</i> - To use the Food Guide Pyramid to plan balanced meals.	n/a	4.8; 4.14	4.2	4.23; 4.24
2. <i>Food Safety</i> - To understand and practice food safety rules.	4.1	n/a	4.1; 4.2; 4.8	4.23
3. <i>Label Reader</i> - To learn the importance of eating breakfast and how to make healthy food choices by using information found on food labels.	4.1; 4.8; 4.10; 4.11; 4.13	4.2; 4.7; 4.14; 4.15	4.2; 4.3; 4.5	4.22; 4.23; 4.24
4. <i>Veggie Taste Test</i> - To evaluate vegetables based on color, texture, taste and smell.	4.1	n/a	4.2	4.23
1. <i>Garden to the Table</i> - To determine harvest time of various garden vegetables.	n/a	n/a	4.1	n/a
2. <i>Beauty Contest</i> - To rank vegetables based on appearance.	4.4; 4.5; 4.15	n/a	4.2	4.23
1. <i>Garden Vegetable Casserole</i> - To create a casserole with vegetables from your garden.	n/a	4.2; 4.11; 4.14	4.1	n/a
2. <i>Veggie Pizza</i> - To use the Food Guide Pyramid to plan balanced meals.	n/a	4.2; 4.14	4.1	4.23
3. <i>Salad Supper</i> - To use the Food Guide Pyramid to plan balanced meals.	4.1	4.14; 4.15	4.1; 4.2	4.22; 4.23
4. <i>Cultural Cooking</i> - To plan, plant, and harvest a theme garden that will grow ingredients for a recipe.	n/a	n/a	n/a	4.20; 4.22
5. <i>Garden Sponge</i> - To grow and harvest a crop of boba sponges.	n/a	n/a	4.10	4.22; 4.23
1. <i>Touch and Smell</i> - To identify herbs based on the sense of touch and smell.	n/a	n/a	4.2	4.23
2. <i>Herbal Vinegar</i> - To make and bottle herbal vinegar.	n/a	n/a	4.1	n/a
3. <i>Herb Bath Salts</i> - To prepare herbal bath salts wraps.	n/a	4.11; 4.14	n/a	n/a
4. <i>Herb Sachets</i> - To create herb sachets from dried herbs.	n/a	4.12; 4.14	4.1	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

### Life Skills and Career Exploration

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Who are You?</i> - To understand the many roles we have in life and begin to understand that each member is a very unique and special person.	4.1; 4.4; 4.15; 4.16; 4.18	4.15	n/a	4.23
2. <i>"What are you like?"</i> - To help members examine their feelings, self-concepts, and values as they make choices.	4.1; 4.4; 4.15	n/a	n/a	4.23
3. <i>Know Your JMG Friends</i> - Youth will recognize positives in their fellow students.	4.1	n/a	n/a	n/a
4. <i>Good JMG'ers Wanted Posters</i> - Confirm each student's uniqueness by having them take their own	4.1	n/a	n/a	4.23; 4.24
5. <i>How would you feel?</i> - To understand that how you treat other people is very important.	4.1; 4.2	n/a	n/a	4.23
6. <i>Feeling Bee</i> - Youth will recognize that others have some of the same feelings they do in certain situations.	4.1; 4.2; 4.4; 4.15; 4.16; 4.18	n/a	n/a	n/a
1. <i>Where's My Fruit?</i> - To demonstrate the importance of sharing with your friends.	4.1	4.14	n/a	4.23; 4.24
2. <i>Let's Build It</i> - To explain the importance of cooperation in a group situation.	4.1; 4.2; 4.5; 4.15; 4.18	n/a	n/a	4.23; 4.24
3. JMG Cooperation Roster - To explain the importance of cooperation in a group situation.	4.13	n/a	n/a	4.23
4. <i>Musical Chairs with a Twist</i> - To explain the importance of cooperation and sharing in a group.	4.1	n/a	n/a	n/a
5. <i>Over and Under</i> - To illustrate group cooperation in a competitive situation.	4.1	n/a	n/a	n/a
6. <i>Cooperation Countdown</i> - To demonstrate the importance of cooperation in a group.	4.1	n/a	n/a	n/a
1. <i>Garden Shed</i> - To develop listening/communication skills. Helps with memory tasks.	4.1	n/a	n/a	n/a
2. <i>Who's Who on Our Team?</i> - To identify and practice different modes and methods of communication.	4.5; 4.15	n/a	n/a	4.23
3. <i>Can You Follow Me?</i> - To identify and practice different methods of communication.	4.1	n/a	n/a	4.23
4. <i>Plant a Seed</i> - To demonstrate the importance of clear verbal communication.	4.1; 4.5; 4.15; 4.16; 4.18	n/a	n/a	4.23
1. Goal Search - To teach members what a goal is.	4.1; 4.15	n/a	n/a	4.23
2. <i>Right on Target</i> - To demonstrate the skills needed for goal setting and construct personal goals.	4.1	4.3	n/a	4.23
3. <i>The Class/Club Chronicle</i> - To write appropriate short-term personal goals.	4.15; 4.16; 4.19	n/a	n/a	4.23
4. <i>Watch Me Grow</i> - To discuss the different types of goals: short-range and long-range.	4.4	n/a	n/a	4.23

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 4

#### Life Skills and Career Exploration (continued)

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Making a Machine</i> - To teach group cooperation and the importance of each member's role.	4.1	n/a	4.5	4.23
2. <i>Create a Costume</i> - To stimulate creative thinking and to implement the group decision-making process	4.5	n/a	n/a	4.23
3. <i>Pass It On!</i> - To facilitate group members getting to know each other.	4.1; 4.5; 4.7; 4.8; 4.10; 4.15; 4.16; 4.18	n/a	n/a	4.23
4. <i>Either/Or</i> - To explain the decision-making process.	4.1	n/a	4.2	4.23
5. <i>Let's Make a Case Out of It</i> - To explain how the decision-making process works with a group decision	4.1; 4.5	n/a	4.2	4.23; 4.24
6. <i>It's in the Bag</i> - To understand the importance of gathering information for decision-making and problem solving.	4.1; 4.15; 4.16; 4.18	n/a	4.2	4.23
1. <i>Shared Responsibility</i> - To understand their responsibility to a group and its members	4.1; 4.5	n/a	n/a	4.23
2. <i>Consequences</i> - To understand self-responsibility.	4.1	n/a	4.2	4.23; 4.24
3. <i>Touchdown</i> - To set responsibility goals to work toward.	4.1	4.3	n/a	n/a
4. <i>Don't Stamp Me</i> - To determine whether stereotypes influence how they act and respond to situations.	4.1; 4.2; 4.5	n/a	n/a	4.23
1. <i>Careers and School</i> - To compare and contrast school and the world of work.	4.1; 4.10; 4.15; 4.16; 4.18; 4.21	n/a	n/a	n/a
2. <i>Career Teams</i> - To analyze various careers in terms of group or individual involvement.	4.1	n/a	n/a	n/a
3. <i>When I Grow Up</i> - To become aware of the choices they will make when choosing a career.	4.10	n/a	n/a	n/a
4. <i>Dream House</i> - To identify impact of various careers on their world.	4.10	n/a	n/a	4.23
5. <i>All for One</i> - To identify careers that operate independently and those that operate as a team.	4.1	n/a	n/a	4.23

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

### Plant Growth and Development

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Ham burger Plant?</i> - To become aware of dependence on plants as the originator of most food sources	5.2; 5.5; 5.13; 5.15	n/a	5.2	5.26
2. <i>Benefits Mobile</i> - To be aware of the dependence all people have on plants	5.2; 5.13	n/a	5.2	5.26
3. <i>Know &amp; Show Sombrero</i> - To show an understanding of the benefits of plants to people	n/a	n/a	5.2	5.26
4. <i>The Medicine Plant</i> - To recognize the medicinal properties of the aloe vera plant	n/a	n/a	n/a	n/a
5. <i>Choo-Choo Song</i> - To associate a variety of plants with their food products by learning a song	n/a	n/a	n/a	n/a
1. <i>Leaves &amp; Seeds Sort Info Chart</i> - To be able to classify leaves and seeds as monocots & dicots	5.1	5.2	5.2	5.26
1. <i>Plant Parts Rap</i> - To gain understanding of the main parts of a plant and role each performs	n/a	n/a	5.2	n/a
2. <i>Touch &amp; Tell</i> - To use information learned about plant parts to identify plant materials by touch	n/a	n/a	5.2	n/a
3. <i>Plant Parts We Eat</i> - To identify the various plant parts that are used for food	n/a	n/a	5.2	5.25; 5.26
4. <i>Seed Science</i> - To use the scientific method to determine the effect on plant growth of removing the cotyledons from seeds	n/a	5.15	5.2; 5.3	n/a
5. <i>Flower Dissect</i> - To identify the different parts of a flower	n/a	n/a	5.2	5.26
1. <i>P.L.A.N.T. Needs</i> - To become familiar with plants' needs	n/a	n/a	5.2	5.26
2. <i>What's Not the Same?</i> - To become familiar with variables and constants	n/a	5.11; 5.14; 5.15	5.2; 5.3; 5.4	n/a
3. <i>Plant People</i> - To show an understanding of plant needs through creative arts	n/a	5.14	5.11	n/a
4. <i>Picture Yourself a Plant</i> - To show an understanding of plant needs through creative arts	5.5	n/a	n/a	5.26
1. <i>Coconut Float</i> - To illustrate the different ways seeds are dispersed	n/a	n/a	5.2; 5.6; 5.9	n/a
2. <i>Plant Performance</i> - To develop an understanding of plant needs through creative writing	5.15	n/a	n/a	5.26
3. <i>Topiary</i> - To create living, growing works of art	n/a	5.14	5.1	n/a
4. <i>Power Seeds</i> - To observe the force seeds exhibit in the germination process	n/a	n/a	5.2	n/a
1. <i>Oxygen Factory</i> - To illustrate the process of photosynthesis	n/a	n/a	5.2; 5.5; 5.6	n/a
2. <i>Gas Gobblers</i> - To demonstrate the interdependence people and animals share with	n/a	n/a	5.2; 5.3; 5.5; 5.6	5.26
3. <i>Spinning Seeds</i> - To determine the effect of geotropism on plants	n/a	n/a	5.1; 5.2; 5.3	5.26
1. <i>Paper Pot</i> - To create recyclable pots and propagate plants by seed	n/a	n/a	5.1; 5.5	n/a
2. <i>Gallon Greenhouse</i> - To show an understanding of the environment needed to propagate plants	n/a	n/a	5.1; 5.9; 5.11	n/a
3. <i>Propagation Demonstration</i> - To demonstrate how to propagate plants by direct seeding, stem cuttings, leaf cuttings, root cuttings, division, and layering	n/a	5.14	5.1; 5.9; 5.10; 5.11	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

### Soils and Water

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Touchy Feely</i> - To understand soil texture and the properties of different soil types and soil particles	n/a	n/a	5.2; 5.3; 5.7	n/a
2. <i>Mud Pies</i> - To feel the difference in soil textures	5.2	n/a	5.2; 5.7	n/a
3. <i>Shake, Rattle, and Roll</i> - To identify amounts of soil particles that make up a soil's texture	5.1; 5.2; 5.13	n/a	5.1; 5.2; 5.4; 5.7	5.26
4. <i>Candy Aggregate</i> - To create an edible model illustrating that soil is made up of many different components	n/a	n/a	5.3	n/a
1. <i>Nutrient Variable</i> - To use scientific method to study the effects of fertilizer on plant growth	5.2; 5.13	5.1; 5.3; 5.11; 5.12; 5.13; 5.14; 5.16	5.1; 5.2; 5.3; 5.4; 5.11	5.26; 5.27
2. <i>The Numbers on the Bag Song</i> - to gain an understanding of how nutrients in fertilizer help plants	n/a	n/a	n/a	n/a
3. <i>Bumps Below</i> - To become familiar with plants that produce their own nitrogen	5.2; 5.13	n/a	5.2; 5.6; 5.9	n/a
1. <i>Building Bins &amp; Compost Sandwiches</i> - To build a composting bin for creating organic matter to amend soil	n/a	5.3; 5.10; 5.11; 5.14	5.1; 5.5; 5.6; 5.7; 5.9; 5.11	n/a
2. <i>Composting Critter Page</i> - To identify organisms that are a part of the composting process.	5.1	n/a	5.2	5.25; 5.26
3. <i>Compost Sandwich Composition</i> - To compose a paragraph to support the claim that it is important to compost	5.15; 5.16; 5.17; 5.18; 5.19	n/a	n/a	5.26
1. <i>Earth Apple</i> - To become familiar with plants' needs	5.2; 5.10	5.1; 5.12; 5.13; 5.14; 5.15	5.3; 5.6	5.25
2. <i>C bud Maker</i> - To demonstrate the process of condensation	5.2	n/a	5.3; 5.5; 5.6; 5.7	n/a
3. <i>Cycle Song</i> - To gain understanding of the water cycle through music	n/a	n/a	n/a	n/a
4. <i>Apple Rings &amp; Banana Chips</i> - To measure the amount of water in fruit	5.2; 5.10; 5.13	5.1; 5.3; 5.5; 5.11; 5.13; 5.14; 5.15; 5.16	5.1; 5.2; 5.3; 5.4	5.25; 5.26
1. <i>Out of the Spout</i> - To develop an understanding of how water moves through different soil textures	n/a	5.11; 5.13; 5.15	5.2; 5.3; 5.4; 5.11	n/a
2. <i>Where Did It Go?</i> - To demonstrate that water can be held in air spaces in the soil	n/a	5.3; 5.11; 5.14	5.2; 5.3	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

### Ecology and Environmental Horticulture

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Nature Class Web</i> - To create a web to understand the inter-relatedness of life on earth.	5.3	n/a	5.1; 5.5	5.26
2. <i>Food Chain Game</i> - To play a game represent the inter-relatedness of animals and the environment within the food chain.	n/a	n/a	4.1; 4.5	4.23; 4.24
3. <i>Polluting Your Planet</i> - To observe the effects of pollution on a model of the earth.	n/a	5.11	5.1; 5.2; 5.3; 5.5; 5.11	5.26
4. <i>Exploding Cactus</i> - To demonstrate how cacti are able to store water.	n/a	n/a	5.5; 5.9	n/a
5. <i>Garden Weather Station</i> - To create weather instruments and monitor weather conditions.	n/a	5.3; 5.11; 5.14; 5.15	5.2; 5.4	5.26
1. <i>The Tree Community</i> - To observe the variety of life supported by a single tree.	5.1; 5.4	n/a	5.2; 5.4; 5.5; 5.9	5.26
2. <i>Gourd Bird House</i> - To grow and build habitats for birds using gourds.	n/a	n/a	n/a	n/a
3. <i>Our Pocket Park</i> - To beautify an outdoor area.	5.15; 5.16; 5.17	5.11; 5.14	5.1; 5.2; 5.4; 5.9	5.26
4. <i>Backyard Buddy</i> - To reward environmentally friendly	5.1	5.3	5.2	5.26
5. <i>Visit with a Vet</i> - To understand needs and habitats of animals in your community.	5.1	n/a	n/a	5.26
1. <i>On the Move</i> - To understand how pollution can create many indirect negative effects.	n/a	n/a	5.1; 5.23; 5.3; 5.5; 5.11	5.26
2. <i>Both Sides of the Fence</i> - To voice opinions in a debate format.	5.1; 5.2; 5.5; 5.15	n/a	5.1; 5.5	5.24; 5.26; 5.27
3. <i>Weighing Wastes</i> - To measure amount of food wastes produced at a meal and work to reduce wastes for the future.	n/a	5.3; 5.11; 5.13; 5.14; 5.15	5.1; 5.2; 5.3; 5.4	5.25; 5.26; 5.27
4. <i>Let's Try Organic</i> - To implement organic gardening ideas into a garden setting.	n/a	n/a	5.1; 5.2; 5.5; 5.9	5.27
5. <i>Xeriscape</i> - To build a garden site using water conservation concepts.	n/a	n/a	5.1; 5.2; 5.3; 5.5; 5.9	5.25; 5.26; 5.27
1. <i>Worm Composting</i> - To recycle food wastes with worm composting.	n/a	5.11; 5.14; 5.15	5.1; 5.3; 5.4; 5.5; 5.9; 5.11	5.26
2. <i>Super Mowing Machine</i> - To utilize creativity to invent a new mowing machine.	5.5	n/a	5.5	5.26
3. <i>Grow Cards</i> - To recycle newspaper to create plantable greeting cards.	5.15	n/a	5.1	5.26
4. <i>Know &amp; Show Recycling Sombrero</i> - To wearable works of art that displays materials that can be recycled.	n/a	n/a	n/a	n/a
1. <i>Plant Pounding</i> - To transfer the likeness of plant parts to fabric.	n/a	n/a	n/a	n/a
2. <i>Let's Dye It</i> - To color eggs or fabrics using dyes created from natural materials.	n/a	n/a	n/a	n/a
3. <i>Nature Windows</i> - To create art using natural materials.	5.15	5.11	n/a	5.26
4. <i>Garden Folk</i> - To build a scarecrow.	5.15	n/a	n/a	5.26
5. <i>Nature Masks</i> - To create wearable art using natural materials.	n/a	n/a	n/a	n/a
6. <i>Mother Nature's Children</i> - To create art using natural materials.	n/a	n/a	n/a	5.26

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

### Insects and Diseases

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Insect Predictions and Survey</i> - To predict insect characteristics and learn what all insects have in common.	5.1	5.3	5.1; 5.2; 5.4	5.26
2. <i>Insect Symmetry</i> - To learn and understand the concept of symmetry.	5.1	5.2; 5.15	5.2	5.26
3. <i>The Great Cover-Up!</i> - To learn and understand the concept of camouflage.	5.1	n/a	5.9	5.26
4. <i>Designer Bugs</i> - To reinforce concepts learned about insects so far: their characteristics and the concepts of symmetry and camouflage.	5.1; 5.5; 5.15	n/a	5.2	5.26
5. <i>Insect Riddles</i> - To reinforce basic concepts learned about insects so far, and to experiment with creative writing concepts by creating riddles.	5.15; 5.19	n/a	n/a	5.26
6. <i>Secret Smells Game</i> - To discover how insects communicate using pheromones.	n/a	n/a	5.9	n/a
1. <i>All in the Family: Insect Flash Cards</i> - To learn that insects are organized in groups based on their characteristics. To learn the characteristics common to all insects and the characteristics specific to a few groups of insects, e.g.	5.1	n/a	5.2; 5.3; 5.9; 5.10	5.26
2. <i>Ordering Insects</i> - To learn to sort insects based on similarities and differences, and make a basic insect key.	n/a	5.15	5.2; 5.3; 5.9; 5.10	5.26
3. <i>Metamorphosis Bracelets and Belts</i> - To learn the stages of metamorphosis.	n/a	n/a	5.5; 5.6; 5.9; 5.10	5.26
4. <i>Morpho Puppets</i> - To learn the stages of complete metamorphosis, and teach them to a younger group.	5.5	n/a	5.6; 5.9; 5.11	5.26
5. <i>JMG Web Activity: Journey North</i> - To gain familiarity with the Internet as a research tool.	5.15	n/a	5.2; 5.6; 5.9	5.25; 5.26
1. <i>Suck-A-Bug</i> - To make a simple aspirator and use it to collect and observe small insects.	n/a	n/a	5.4	n/a
2. <i>It's a Small World</i> - To create Berlese (Bur-lay-z) funnel and use it to collect and observe insects living in the ground and soil.	5.10; 5.15	5.11; 5.13; 5.15	5.1; 5.2; 5.4	5.26
3. <i>Classroom Netting</i> - To make an insect net and use it to collect samples of insects by sweeping.	n/a	5.15	5.1; 5.2; 5.4	5.26
4. <i>By Land or By Sea</i> - To compare and contrast the types of insects living in different habitats.	5.5; 5.10	5.15	5.1; 5.2; 5.4	5.26; 5.27
5. <i>Classroom Ant Lion Farm</i> - To make a living collection of one type of insect and observe it closely as it builds	5.15	5.15	5.1; 5.2; 5.4; 5.9	5.26; 5.27
1. <i>Chew on This!</i> - To learn the four types of insect mouthparts and how they are specialized.	n/a	n/a	5.9	n/a
2. <i>Schoolyard Survey</i> - To survey the schoolyard for signs of insect damage and to determine the types of insects that caused the damage.	5.1	5.14; 5.15	5.1; 5.2; 5.4	5.26
3. <i>Pollinator Puppet Show</i> - To learn the basic process of insect pollination.	5.1	n/a	5.9	5.26
4. <i>The Bartering System</i> - To learn how plants and insects trade services, and to become familiar with the concept of energy exchange.	n/a	5.3	5.1; 5.9	n/a
5. <i>The Lone Bee</i> - To learn about solitary bees and create a bee home for them.	n/a	n/a	n/a	n/a
6. <i>Designer Plants and Insects</i> - To combine previously learned concepts in creating insects and plants that are designed to work together.	5.15; 5.16	n/a	5.2	5.26; 5.27



# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

#### Insects and Diseases (continued)

Activity	Language Arts	Mathematics	Science	Social Studies
Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Insect Predictions and Survey</i> - To predict insect characteristics and learn what all insects have in common.	5.1	5.3	5.1; 5.2; 5.4	5.26
2. <i>Insect Symmetry</i> - To learn and understand the concept of symmetry.	5.1	5.2; 5.15	5.2	5.26
3. <i>The Great Cover-Up!</i> - To learn and understand the concept of camouflage.	5.1	n/a	5.9	5.26
4. <i>Designer Bugs</i> - To reinforce concepts learned about insects so far: their characteristics and the concepts of symmetry and camouflage.	5.1; 5.5; 5.15	n/a	5.2	5.26
5. <i>Insect Riddles</i> - To reinforce basic concepts learned about insects so far, and to experiment with creative writing concepts by creating riddles.	5.15; 5.19	n/a	n/a	5.26
6. <i>Secret Smells Game</i> - To discover how insects communicate using pheromones.	n/a	n/a	5.9	n/a
1. <i>All in the Family: Insect Flash Cards</i> - To learn that insects are organized in groups based on their characteristics. To learn the characteristics common to all insects and the characteristics specific to a few groups of insects, ca	5.1	n/a	5.2; 5.3; 5.9; 5.10	5.26
2. <i>Ordering Insects</i> - To learn to sort insects based on similarities and differences, and make a basic insect key.	n/a	5.15	5.2; 5.3; 5.9; 5.10	5.26
3. <i>Metamorphosis Bracelets and Belts</i> - To learn the stages of metamorphosis.	n/a	n/a	5.5; 5.6; 5.9; 5.10	5.26
4. <i>Morpho Puppets</i> - To learn the stages of complete metamorphosis, and teach them to a younger group.	5.5	n/a	5.6; 5.9; 5.11	5.26

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

### Landscape Horticulture

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Room s</i> - To understand that areas within a space serve a special purpose and to define those areas.	5.1	n/a	n/a	5.26
2. <i>People and Places</i> - To understand that different people use yard space differently.	5.5; 5.10	n/a	n/a	5.26; 5.27
3. <i>Money Trees</i> - To understand that trees help to save energy and money.	5.1	n/a	5.4	5.26
4. <i>Site Map</i> - To experience an initial step in the landscape design process.	n/a	5.3; 5.11; 5.14; 5.15	5.2	5.26
1. <i>Nature Wheels</i> - To build a cobr wheel from items found in nature and understand the relationship of one cobr to another.	5.5; 5.15	n/a	5.2; 5.9	5.6; 5.7; 5.25; 5.26; 5.27
2. <i>Texture Collection</i> - To understand how the design element, "texture," is used to visually create interest in the landscape.	5.1; 5.15; 5.18	n/a	5.2	5.26; 5.27
3. <i>Same Sides</i> - To understand the element of design, "balance," using symmetrical and asymmetrical visuals.	5.1; 5.5	5.15	5.2	5.26; 5.27
4. <i>Does it Fit?</i> - To demonstrate understanding of the design element, "proportion."	n/a	5.3; 5.11; 5.15	5.2	5.26; 5.27
1. <i>Tearing Trees</i> - Learning to identify trees based on their classification and shape.	5.13; 5.15	5.15	5.2	5.26; 5.27
2. <i>How Tall is that Tree?</i> - To measure the height of a large tree.	n/a	5.3; 5.11; 5.14; 5.15	5.2; 5.3; 5.4	5.26
3. <i>Learning Your ABP's</i> - To understand plant classifications.	5.1	n/a	5.6; 5.9; 5.10; 5.11	5.26
4. <i>Great Green Grass</i> - Selection of grasses should be based upon care and maintenance requirements.	5.1; 5.5	n/a	5.2; 5.3; 5.5; 5.9; 5.11	5.26; 5.27
1. <i>Arbor Day</i> - Understanding that trees are an important natural resource and ways people celebrate their friend, the tree.	5.1; 5.5	n/a	5.1; 5.2	5.26
2. <i>Do it Right</i> - To demonstrate through creative dramatics the proper way to plant a tree.	5.1; 5.5; 5.15	n/a	5.2	5.26
3. <i>Seed, Sod, &amp; Plugs</i> - To become familiar with different methods used in establishing a lawn.	5.5; 5.15	n/a	5.1; 5.2; 5.9; 5.10; 5.11	5.25; 5.26
1. <i>An Inch of Water</i> - Understanding lawn landscape water use and water conservation and money saving through proper use of irrigation systems.	n/a	5.2; 5.3; 5.11; 5.12; 5.14; 5.15	5.1; 5.2; 5.3; 5.4; 5.11	5.26; 5.27
2. <i>Pruning Places</i> - To learn reasons why plants are pruned and proper pruning techniques.	n/a	5.14	5.1; 5.2; 5.9; 5.10; 5.11	n/a
3. <i>More Muck, More Moist</i> - To study the effects of muck on conserving water.	5.1	5.11; 5.14; 5.15	5.1; 5.2; 5.3; 5.4; 5.11	5.26; 5.27
4. <i>Queen Bud</i> - To learn the difference between terminal buds and lateral buds and their effects on plants.	5.1; 5.5	n/a	5.2; 5.3; 5.11	5.26

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

### Fruits and Nuts

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Dr. Fruit</i> - To research origins and relevant information about fruit and nuts	5.1; 5.4; 5.13	5.3; 5.13	n/a	5.26
2. <i>Linnaeus' Name It</i> - To become aware of the dependence all people have on plants	5.2; 5.15; 5.22	n/a	n/a	n/a
3. <i>Botanical Wood Prints</i> - To recreate a historical wood press	5.1; 5.2	n/a	n/a	n/a
4. <i>A Bushel and a Peck</i> - To gain understanding of non-traditional measurements	5.1; 5.2; 5.13	5.3; 5.11; 5.14; 5.15	5.2	n/a
5. <i>Fruit and Vegetable Lab</i> - To learn what a fruit is, and to explore the difference between technical definitions and social customs.	5.1; 5.2; 5.4; 5.10; 5.13	n/a	5.2; 5.3	n/a
1. <i>Snooty Fruit</i> - To identify various fruits and nuts using sense of smell	5.1; 5.16; 5.17	n/a	5.2	n/a
2. <i>Apple-ing Appearance</i> - To create an instrument to evaluate apples on shape and color, and contrast	5.1; 5.2; 5.13; 5.15; 5.16	5.3	5.2	n/a
3. <i>Taste Test</i> - To evaluate fruit based on color, texture, taste, and smell	5.1; 5.13	n/a	5.2	n/a
4. <i>JMG Jam</i> - To use measurements to create a fruit product	5.1; 5.2; 5.5; 5.13	5.11; 5.14	5.1; 5.2; 5.7	n/a
5. <i>Johnny's Applesop</i> - To gain understanding of the main parts of a plant and role each performs	5.1; 5.2; 5.13	5.11; 5.14	n/a	n/a
1. <i>A Fruit's Life Rhyme</i> - To gain understanding of the life cycle of plants	5.1; 5.2; 5.5	n/a	n/a	n/a
2. <i>Fruit Frenzy</i> - To become familiar with the way fruits and vegetables develop around seeds	5.1; 5.2	n/a	5.2	n/a
3. <i>The Zones</i> - To identify the appropriate plants for a particular temperature zone	5.1; 5.2	n/a	5.2	5.6
4. <i>Just Chill</i> - To simulate a winter environment to provide chilling requirement for an apple seed	5.1; 5.2; 5.5	5.3	5.2; 5.11	n/a
5. <i>Fruit Factory</i> - To use reference material to choose a fruit or nut tree to plant or transplant	5.1; 5.2	n/a	5.2; 5.11	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

#### Vegetables and Herbs

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Home Sweet Home</i> - To understand the criteria for selecting a good garden site and to select an appropriate garden site based on those criteria.	5.5	n/a	5.2	5.26; 5.27
2. <i>Make Your Pick</i> - To select appropriate crops for planting based on season.	5.10	n/a	5.2; 5.6	5.25; 5.26
3. <i>Small and Large</i> - To gain an understanding of space considerations when planting seeds.	n/a	5.1; 5.11; 5.13; 5.14; 5.15	5.2; 5.3; 5.4; 5.9	5.6; 5.25; 5.26; 5.27
4. <i>Rules are Rules</i> - To establish rules for the garden that make it a safer place to learn.	5.4; 5.15	n/a	n/a	5.26; 5.27
5. <i>Schedule It</i> - To establish a schedule where all learners take part in maintaining the watering and	n/a	5.3; 5.11	5.2	5.25; 5.26; 5.27
6. <i>Some Like It Hot</i> - To distinguish between warm season and cool season crops.	5.10	n/a	5.6; 5.9	n/a
1. <i>Cylinder Gardening</i> - To successfully grow vegetables and herbs in containers.	n/a	5.11; 5.14	5.1; 5.2; 5.3; 5.4; 5.5; 5.11	5.27
2. <i>Paper Towel Gardening</i> - To create seed mats and transplant templates which will aid in organizing and laying out the garden.	n/a	5.2; 5.11; 5.14; 5.15	5.3	5.25; 5.26; 5.27
3. <i>Tender Transplants</i> - To understand the benefits and practice techniques of transplanting.	5.5	5.11	5.1; 5.5; 5.11	5.26
4. <i>Weed Mats</i> - To create a natural form of weed control.	5.10	n/a	5.1; 5.3; 5.9; 5.11	5.26
5. <i>Season Extenders</i> - To create an environment for plants.	n/a	n/a	5.3; 5.6; 5.9	5.24; 5.26; 5.27
1. <i>The Pyramid</i> - To use the Food Guide Pyramid to plan balanced meals.	n/a	5.7; 5.14	5.2	5.26; 5.27
2. <i>Food Safety</i> - To understand and practice food safety rules.	5.1	n/a	5.1; 5.2; 5.9	5.26
3. <i>Label Reader</i> - To learn the importance of eating breakfast and how to make healthy food choices by using information found on food labels.	5.1; 5.8; 5.10; 5.11; 5.13	5.2; 5.5; 5.14; 5.15	5.2; 5.3	5.25; 5.26; 5.27
4. <i>Veggie Taste Test</i> - To evaluate vegetables based on color, texture, taste and smell.	5.1	n/a	5.2	5.26
1. <i>Garden to the Table</i> - To determine harvest time of various garden vegetables.	n/a	n/a	5.1	n/a
2. <i>Beauty Contest</i> - To rank vegetables based on appearance.	5.4; 5.5; 5.15	n/a	5.2	5.26
1. <i>Garden Vegetable Casserole</i> - To create a casserole with vegetables from your garden.	n/a	5.2; 5.11; 5.14	5.1	n/a
2. <i>Veggie Pizza</i> - To use the Food Guide Pyramid to plan balanced meals.	n/a	5.2; 5.14	5.1	5.26
3. <i>Salad Supper</i> - To use the Food Guide Pyramid to plan balanced meals.	5.1	5.14; 5.15	5.1; 5.2	5.25; 5.26
4. <i>Cultural Cooking</i> - To plan, plant, and harvest a theme garden that will grow ingredients for a recipe from different cultures.	n/a	n/a	n/a	5.23; 5.25
5. <i>Garden Sponge</i> - To grow and harvest a crop of boba sponges.	n/a	n/a	5.11	5.25; 5.26
1. <i>Touch and Smell</i> - To identify herbs based on the sense of touch and smell.	n/a	n/a	5.2	5.26
2. <i>Herbal Vinegar</i> - To make and bottle herbal vinegar.	n/a	n/a	5.1	n/a
3. <i>Herb Bath Salts</i> - To prepare herbal bath salts wraps.	n/a	5.11; 5.14	n/a	n/a
4. <i>Herb Sachets</i> - To create herb sachets from dried herbs.	n/a	5.11; 5.14	5.1	n/a

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

#### Life Skills and Career Exploration

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Who are You?</i> - To understand the many roles we have in life and begin to understand that each member is a very unique and special person.	5.1; 5.4; 5.15; 5.16; 5.18	5.15	n/a	5.26
2. <i>"What are you like?"</i> - To help members examine their feelings, self-concepts, and values as they make choices.	5.1; 5.4; 5.15	n/a	n/a	5.26
3. <i>Know Your JMG Friends</i> - Youth will recognize positives in their fellow students.	5.1	n/a	n/a	n/a
4. <i>Good JMG'ers Wanted Posters</i> - Confirm each student's uniqueness by having them take their own fingerprints.	5.1	n/a	n/a	5.26; 5.27
5. <i>How would you feel?</i> - To understand that how you treat other people is very important.	5.1; 5.2	n/a	n/a	5.26
6. <i>Feeling Bee</i> - Youth will recognize that others have some of the same feelings they do in certain situations.	5.1; 5.2; 5.4; 5.15; 5.16; 5.18	n/a	n/a	n/a
1. <i>Where's My Fruit?</i> - To demonstrate the importance of sharing with your friends.	5.1	5.14	n/a	5.26; 5.27
2. <i>Let's Build It</i> - To explain the importance of cooperation in a group situation.	5.1; 5.2; 5.5; 5.15; 5.18	n/a	n/a	5.26; 5.27
3. JMG Cooperation Roster - To explain the importance of cooperation in a group situation.	5.13	n/a	n/a	5.26
4. <i>Musical Chairs with a Twist</i> - To explain the importance of cooperation and sharing in a group.	5.1	n/a	n/a	n/a
5. <i>Over and Under</i> - To illustrate group cooperation in a competitive situation.	5.1	n/a	n/a	n/a
6. <i>Cooperation Countdown</i> - To demonstrate the importance of cooperation in a group.	5.1	n/a	n/a	n/a
1. <i>Garden Shed</i> - To develop listening/communication skills. Helps with memory tasks.	5.1	n/a	n/a	n/a
2. <i>Who's Who on Our Team?</i> - To identify and practice different modes and methods of communication.	5.5; 5.15	n/a	n/a	5.26
3. <i>Can You Follow Me?</i> - To identify and practice different methods of communication.	5.1	n/a	n/a	5.26
4. <i>Plant a Seed</i> - To demonstrate the importance of clear verbal communication.	5.1; 5.5; 5.15; 5.16; 5.18	n/a	n/a	5.26
1. <i>Goal Search</i> - To teach members what a goal is.	5.1; 5.15	n/a	n/a	5.26
2. <i>Right on Target</i> - To demonstrate the skills needed for goal setting and construct personal goals.	5.1	5.3	n/a	5.26
3. <i>The Class/Club Chronicle</i> - To write appropriate short-term personal goals.	5.15; 5.16; 5.19	n/a	n/a	5.26
4. <i>Watch Me Grow</i> - To discuss the different types of goals: short-range and long-range.	5.4	n/a	n/a	5.26

# Junior Master Gardener Program

## Texas Essential Knowledge and Skills

### Grade 5

#### Life Skills and Career Exploration (continued)

Activity	Language Arts	Mathematics	Science	Social Studies
1. <i>Making a Machine</i> - To teach group cooperation and the importance of each member's role.	5.1	n/a	5.5	5.26
2. <i>Create a Costume</i> - To stimulate creative thinking and to implement the group decision-making process	5.5	n/a	n/a	5.26
3. <i>Pass It On!</i> - To facilitate group members getting to know each other.	5.1; 5.5; 5.7; 5.8; 5.10; 5.15; 5.16; 5.18	n/a	n/a	5.26
4. <i>Either/Or</i> - To explain the decision-making process.	5.1	n/a	5.2	5.26
5. <i>Let's Make a Case Out of It</i> - To explain how the decision-making process works with a group decision	5.1; 5.5	n/a	5.2	5.26; 5.27
6. <i>It's in the Bag</i> - To understand the importance of gathering information for decision-making and problem solving.	5.1; 5.15; 5.16; 5.18	n/a	5.2	5.26
1. <i>Shared Responsibility</i> - To understand their responsibility to a group and its members	5.1; 5.5	n/a	n/a	5.26
2. <i>Consequences</i> - To understand self-responsibility.	5.1	n/a	5.2	5.26; 5.27
3. <i>Touchdown</i> - To set responsibility goals to work toward.	5.10	5.3	n/a	n/a
4. <i>Don't Stamp Me</i> - To determine whether stereotypes influence how they act and respond to situations.	5.1; 5.2; 5.5	n/a	n/a	5.26
1. <i>Careers and School</i> - To compare and contrast school and the world of work.	5.1; 5.10; 5.15; 5.16; 5.18; 5.21	n/a	n/a	n/a
2. <i>Career Teams</i> - To analyze various careers in terms of group or individual involvement.	5.1	n/a	n/a	n/a
3. <i>When I Grow Up</i> - To become aware of the choices they will make when choosing a career.	5.10	n/a	n/a	n/a
4. <i>Dream House</i> - To identify impact of various careers on their world.	5.10	n/a	n/a	5.26
5. <i>All for One</i> - To identify careers that operate independently and those that operate as a team.	5.1	n/a	n/a	5.26